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November 16,1999

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BY HAND DELIVERY
Magalie Salas, Esq.
Secretary
Federal Communications Commission
445 12th Street SW
TW-B204
Washington, DC 20554

Re: ET Docket No. 98-156, Amendment of Part 15 of the Commission's Rules to Allow Certification of Equipment in the 24.05-24.25 GHz Band at Field Strengths up to 2500 mV/m

Dear Ms. Salas:

Pursuant to Section 1.1206(a)(2) of the Commission's Rules, I am filing the original and one copy of this letter to report an oral ex parte communication in the above-referenced proceeding.

Yesterday representatives of three wireless equipment manufacturers met at the Commission's offices with Dale Hatfield, Julius P. Knapp, Michael J. Marcus, Neal McNeil, and Karen Rackley, all of the Office of Engineering and Technology. The manufacturers' representatives comprised William Kosoff of Telenetics Corporation, Frank Massa of Wireless, Inc., and the undersigned on behalf of Wireless, Inc., Telenetics, and Racon. (Telenetics is the successor in interest to Sierra Digital Communications, Inc., which filed the initial Petition for Rulemaking in this proceeding.)

The following topics were discussed:

- ***Need for reliability***. Commission personnel questioned whether Part 15 treatment is appropriate for applications that require a high degree of reliability. The manufacturers explained that providers need equipment that can be set up quickly for temporary use, to be replaced by licensed equipment if necessary for the long term. The manufacturers added that users understand their obligation to accept interference pursuant to Section 15.5(b), and agreed to accept additional labeling requirements that emphasize that obligation.

- ***Traffic signal issues***. Commission personnel asked whether interference to Part 15 equipment used for traffic signal synchronization would adversely affect public safety. Mr. Kosoff, whose firm manufactures equipment for that application, explained that a traffic signal continues to operate normally in the case of a communications failure, cycling on its own internal timers instead of synchronizing with adjacent intersections. There is no danger to traffic safety.

- ***Protection of DEMS band***. Commission personnel asked whether the proposed rules would adequately protect the adjacent DEMS band. The manufacturers noted that Teligent, the predominant DEMS licensee, has requested a 10 MHz guard band from 24.24 to 24.25 GHz. The manufacturers stated they have no objection to the Commission's meeting that request, but that a wider guard band is unnecessary. They offered to discuss tightening the proposed stability requirement if the Commission believes additional protection is needed.

- ***Response to Amateur opposition***. The manufacturers noted the Commission has already complied with the Amateur Radio community's request to exclude the 24.00-24.05 GHz sub-band from its proposal, the Amateurs having identified that sub-band as their highest priority at 24 GHz. The manufacturers respected that interest by declining to challenge the exclusion. Predictably, however, Amateur opposition has continued nonetheless. In response, the manufacturers maintain that the proposed rules will reduce the area of potential interference, compared to the present rules, and that actual 24 GHz interference from a 33 dBi antenna into an Amateur receiver is astronomically unlikely. The manufacturers also acknowledge the user's obligation to cease operation in the event such interference does occur.

Attached are documents made available for use at the meeting. Three pages containing proprietary information are omitted.

If there are any questions about this filing, please call me at the number above.

Respectfully submitted,

Mitchell Lazarus

Mitchell Lazarus
Counsel for Telenetics Corporation,
Wireless, Inc., and Racon

ML:deb

Enclosures

cc: Meeting Participants
Mr. John Hale, Racon

FCC Docket 98-156

Federal Communications Commission

November 15, 1999

FCC Docket 98-156

- Need for reliable unlicensed pt-pt broadband "spur routes" to support pt-mp systems operating in ISM and UNII bands
- BW to support ATM and ethernet wireless bridging applications for Wireless DSL
- Application supported by ILEC and CLECs
  - US West and others

Lower Frequency Unlicensed

- 900 MHz - Very Thin Route CPE
- 2.4 GHz ISM - Thin Route CPE
- 5.8 GHz ISM - Thin Route CPE
- UNII Band, Max T-R = 50 MHz
  - 5.150 - 5.250, Indoor Only
  - 5.250 - 5.350, T-R limited
  - 5.725 - 5.825, Overlaps with 5.8 ISM

24 GHz ISM Pt-Pt

- 250 mv/m
  - very short outdoor path reliability
- 2500 mv/m
  - Approx. 100-120 MHz T-R for Full Duplex
  - Simple Modulation for Broadband Pt-Pt
  - .75 to 1.75 mile paths at 99.999% reliability
  - 1 to 2.5 mile paths at 99.99% reliability
  - 33 dBi antenna -3 degree max beamwidth

Path Margins

Distance (miles)	Free-Space Path Loss (dB)	TX EIRP (Max) Gain (dBm)	Signal Strength (dBm)	RX ANT Gain Gain (dBi)	RX Threshold (dBm)	Fade Margin (dB)
0.5	118	33	-85	33	-80	28
1	124	33	-91	33	-80	22
1.5	128	33	-95	33	-80	18
2	130	33	-97	33	-80	16
2.5	132	33	-99	33	-80	14
3	134	33	-101	33	-80	12
3.5	135	33	-102	33	-80	11
4	136	33	-103	33	-80	10
4.5	137	33	-104	33	-80	9
5	138	33	-105	33	-80	8
5.5	139	33	-106	33	-80	7
6	140	33	-107	33	-80	6
6.5	141	33	-108	33	-80	5
7	141	33	-108	33	-80	5
7.5	142	33	-109	33	-80	4
8	142	33	-109	33	-80	4
8.5	143	33	-110	33	-80	3
9	143	33	-110	33	-80	3
9.5	144	33	-111	33	-80	2
10	144	33	-111	33	-80	2

33 dBi Antenna Characteristics

		Signal Strength (dBm) vs Center Bore Site Offset (degrees)						
Distance (miles)	Path Loss (dB)	0 to 3	4 to 9	10 to 14	15 to 19	20 to 29	30 to 99	00 to 18
0.125	106	-73	-93	-97	-101	-105	-108	-109
0.25	112	-79	-99	-103	-107	-111	-114	-115
0.5	118	-85	-105	-109	-113	-117	-120	-121
1	124	-91	-111	-115	-119	-123	-126	-127
1.5	128	-95	-115	-119	-123	-127	-130	-131
2	130	-97	-117	-121	-125	-129	-132	-133
2.5	132	-99	-119	-123	-127	-131	-134	-135
3	134	-101	-121	-125	-129	-133	-136	-137
3.5	135	-102	-122	-126	-130	-134	-137	-138
4	136	-103	-123	-127	-131	-135	-138	-139
4.5	137	-104	-124	-128	-132	-136	-139	-140
5	138	-105	-125	-129	-133	-137	-140	-141
5.5	139	-106	-126	-130	-134	-138	-141	-142
6	140	-107	-127	-131	-135	-139	-142	-143
6.5	141	-108	-128	-132	-136	-140	-143	-144
7	141	-108	-128	-132	-136	-140	-143	-144
7.5	142	-109	-129	-133	-137	-141	-144	-145
8	142	-109	-129	-133	-137	-141	-144	-145
8.5	143	-110	-130	-134	-138	-142	-145	-146
9	143	-110	-130	-134	-138	-142	-145	-146
9.5	144	-111	-131	-135	-139	-143	-146	-147
10	144	-111	-131	-135	-139	-143	-146	-147

Planned Channel Usage

TX (Low) RX (High)			TX (High) RX (Low)		
	Polarization			Polarization	
	Vertical	Horizontal		Vertical	Horizontal
Frequency			Frequency		
24000	Guard	Guard	24125		
24005	Guard	Guard	24130		
24010	Channel 1		24135	Channel 1'	
24015	Channel 1		24140	Channel 1'	
24020	Channel 1	Channel 2	24145	Channel 1'	Channel 2'
24025	Channel 1	Channel 2	24150	Channel 1'	Channel 2'
24030	Channel 3	Channel 2	24155	Channel 3'	Channel 2'
24035	Channel 3	Channel 2	24160	Channel 3'	Channel 2'
24040	Channel 3	Channel 4	24165	Channel 3'	Channel 4'
24045	Channel 3	Channel 4	24170	Channel 3'	Channel 4'
24050	Channel 5	Channel 4	24175	Channel 5'	Channel 4'
24055	Channel 5	Channel 4	24180	Channel 5'	Channel 4'
24060	Channel 5	Channel 6	24185	Channel 5'	Channel 6'
24065	Channel 5	Channel 6	24190	Channel 5'	Channel 6'
24070	Channel 7	Channel 6	24195	Channel 7'	Channel 6'
24075	Channel 7	Channel 6	24200	Channel 7'	Channel 6'
24080	Channel 7	Channel 8	24205	Channel 7'	Channel 8'
24085	Channel 7	Channel 8	24210	Channel 7'	Channel 8'
24090	Channel 9	Channel 8	24215	Channel 9'	Channel 8'
24095	Channel 9	Channel 8	24220	Channel 9'	Channel 8'
24100	Channel 9	Channel 10	24225	Channel 9'	Channel 10'
24105	Channel 9	Channel 10	24230	Channel 9'	Channel 10'
24110		Channel 10	24235		Channel 10'
24115		Channel 10	24240		Channel 10'
24120	Guard	Guard	24245	Guard	Guard

lazarus

From: Frank Massa <FMassa@Wire-less-Inc.com>
To: Mitchell Lazarus (E-mail) <lazarus@fhh-telcomlaw.com>
Sent: Thursday, November 11, 1999 9:58 PM
Subject: US West Support for 24 GHz ISM

Mitchell,

Please keep a copy of this for the record..... Don Hohnstein from US West Writes to William French of Wireless, Inc. Read brief message of support below.

-----Original Message-----
From: William French [mailto:wfrench@wire-less-inc.com]
Sent: Thursday, November 11, 1999 3:52 PM
To: fmassa@wire-less-inc.com
Subject: FW: 24 Ghz Microwave

Frank,
Here is Don's response to your question re. use of USWest as a reference.
Go for it.
Bill

-----Original Message-----
From: Don Hohnstein [mailto:dhohnst@uswest.com]
Sent: Thursday, November 11, 1999 3:44 PM
To: wfrench@wire-less-inc.com
Subject: Re: 24 Ghz Microwave

Bill please feel free to go ahead , we do want to support this effort on 24 Ghz Unlicensed spectrum.

Frank Massa

From: Kent M. Erickson [kente@sisna.com]
Sent: Friday, November 12, 1999 12:26 PM
To: fmassa@wire-less-inc.com
Cc: Kent M. Erickson
Subject: Support for ET Docket 98-156

This is to inform you that L-3 Communications supports ET Docket 98-156 for 24 GHz communications.

Please let me know if you have any questions on this matter.

Thank You,

Kent M. Erickson
Director, Commercial Products
L-3 Communications
640 North 2200 West
Salt Lake City, UT 84116

801-594-2044

lazarus

From: Frank Massa <FMassa@Wire-less-Inc.com>
To: Mitchell Lazarus (E-mail) <lazarus@fhh-telcomlaw.com>
Sent: Friday, November 12, 1999 2:55 PM
Subject: TRW support for 24GHz unlicensed use

-----Original Message-----
From: Peter Hadinger [mailto:Peter.Hadinger@trw.com]
Sent: Friday, November 12, 1999 11:35 AM
To: fmassa@wire-less-inc.com
Cc: Greg Taylor; Rocky Roccanova
Subject: TRW support for 24GHz unlicensed use

Frank:
TRW supports Wireless Inc in the adoption of rules proposed in ET docket 98-156 to raise unlicensed emission limits to 2500mV/m, provided that they are limited to the band 24.05-24.24GHz.

As a DEMS licensee in the Los Angeles area, TRW supports Teligent's request that a 10MHz guardband be established from 24.24GHz to 24.25GHz to protect DEMS receivers from interference from unlicensed links and that a +/- 0.003% frequency stability requirement be adopted.

TRW believes that the 24.05-24.24GHz band provides an ideal location for backhaul of unlicensed wireless local loop systems, with sufficient bandwidth for low cost service to both urban and rural subscribers. The high gain antennas proposed in the NPRM will allow a high degree of frequency re-use and sharing among unlicensed users while minimizing the potential for interference.

Please feel free to convey our support (within the conditions specified by Teligent) to the FCC.

Best regards,
Peter Hadinger

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